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| APPLICATION NO. | FILING DATE | FIRST NAMED INVENTOR | ATTORNEY DOCKET NO. | CONFIRMATION NO. |
|---|-------------|----------------------|---------------------------|------------------|
| 10/779,856 | 02/17/2004 | Antonino La Malfa | 854063.745 | 6240 |
| 38106 | 7590 | 01/24/2006 | EXAMINER PHAN, TRONG Q | |
| SEED INTELLECTUAL PROPERTY LAW GROUP PLLC 701 FIFTH AVENUE, SUITE 6300 SEATTLE, WA 98104-7092 | | | ART UNIT 2827 | PAPER NUMBER |

DATE MAILED: 01/24/2006

Please find below and/or attached an Office communication concerning this application or proceeding.

| | | | |
|------------------------------|------------------------|---------------------|--|
| Office Action Summary | Application No. | Applicant(s) | |
| | 10/779,856 | LA MALFA ET AL. | |
| | Examiner | Art Unit | |
| | TRONG PHAN | 2827 | |

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --
Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 06 January 2006.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-21 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1-21 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☒ All b) ☐ Some * c) ☐ None of:
1. ☒ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. _____.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- * See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|--|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413) Paper No(s)/Mail Date. _____ |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | 5) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152) |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08) Paper No(s)/Mail Date _____ | 6) <input type="checkbox"/> Other: _____ |

DETAILED ACTION

Drawings

1. The drawings are objected to as failing to comply with 37 CFR 1.84(p)(5) because they include the following reference character(s) not mentioned in the description: SET SPX32, DATA-OK ?, INCREMENT ROW and INCREMENT COLUMN in Fig. 2; SPX16_MEM = 1 ?, DAT_OK ?, MAX ATTEMP ?, SET SPX16, INCREMENT SENSE CLEAR SPX16 and SET SPX32 in Fig. 3, DATA_OK ?, MAX ATTEMPT ? and SET SPX16 in Fig. 4. Corrected drawing sheets in compliance with 37 CFR 1.121(d), or amendment to the specification to add the reference character(s) in the description in compliance with 37 CFR 1.121(b) are required in reply to the Office action to avoid abandonment of the application. Any amended replacement drawing sheet should include all of the figures appearing on the immediate prior version of the sheet, even if only one figure is being amended. Each drawing sheet submitted after the filing date of an application must be labeled in the top margin as either "Replacement Sheet" or "New Sheet" pursuant to 37 CFR 1.121(d). If the changes are not accepted by the examiner, the applicant will be notified and informed of any required corrective action in the next Office action. The objection to the drawings will not be held in abeyance.

2. The drawings are objected to under 37 CFR 1.83(a). The drawings must show every feature of the invention specified in the claims. Therefore, the first soft-programming and the second soft-programming as recited in claims 1-15; the first soft-programming, the second soft-programming and the third soft-programming as recited

in claims 18-21 must be shown or the feature(s) canceled from the claim(s). No new matter should be entered.

Corrected drawing sheets in compliance with 37 CFR 1.121(d) are required in reply to the Office action to avoid abandonment of the application. Any amended replacement drawing sheet should include all of the figures appearing on the immediate prior version of the sheet, even if only one figure is being amended. The figure or figure number of an amended drawing should not be labeled as "amended." If a drawing figure is to be canceled, the appropriate figure must be removed from the replacement sheet, and where necessary, the remaining figures must be renumbered and appropriate changes made to the brief description of the several views of the drawings for consistency. Additional replacement sheets may be necessary to show the renumbering of the remaining figures. Each drawing sheet submitted after the filing date of an application must be labeled in the top margin as either "Replacement Sheet" or "New Sheet" pursuant to 37 CFR 1.121(d). If the changes are not accepted by the examiner, the applicant will be notified and informed of any required corrective action in the next Office action. The objection to the drawings will not be held in abeyance.

3. The disclosure is objected to because of the following informalities:

The description of Fig.1, as recited in lines 7-15 of page 2, should be placed under DETAILED DESCRIPTION OF THE INVENTION.

The variables "a" (lines 11 and 19, page 9)," F" (lines 13 and 19, page 9) and "INT" (line 19, page 9) should be defined.

All of the features as recited in claims 1-21 are not seen to be described in the specification. Applicant is requested to particularly point out each of the features as recited in respective claims 1-21 is read on which of the respective element as described in the description of the flowcharts as shown in Figs. 2-4 in order to help the examiner to understand the subject matter of the claimed invention.

Appropriate correction is required.

Claim Objections

4. Claims 1-7, 9-14 and 18-21 are objected to because of the following informalities:

Claim 1, "the given operating conditions" (lines 4 and 7-8) is not defined.

Claims 1-7 and 9-14, the "multiplicity" should be defined to be whether a multiple number of times or memory cells.

Claims 2-3, 5, 10-11 and 13, no antecedent basis for "that used for writing data in the memory device".

Claim 9, "the given operating conditions" (lines 5 and 8) is not defined.

Claim 18, the "threshold amount" should be defined as to be threshold voltage, threshold current or else.

Claim 19, the relationship between the bit and the memory cell should be provided since as defined in claim 1, the first plurality and the second plurality are defined as of memory cells. More specifically, one memory cell or two memory cells or more memory cells or else will create one bit.

Claim 20, no antecedent basis for "the threshold amount of current".

Claim 21, no antecedent basis for "power capability".

Appropriate correction is required.

Claim Rejections - 35 USC § 102

5. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

6. Claims 1-21 are, insofar as understood, rejected under 35 U.S.C. 102(b) as being anticipated by Lu et al., 6,363,013.

Lu et al., 6,363,013, discloses in Fig. 8 a non-volatile memory device having the soft-programming operation comprising:

Regarding claims 1-5 and 9-13:

as shown in Fig. 2, a first soft-programming simultaneously (see lines 50-51, column 3; lines 38-41 and 46-49, column 4) multiplicity of 100 memory cells, for example, in a given operating condition of about 0.5 V threshold voltage (see lines 32-34, column 4); a second soft-programming simultaneously multiplicity of 10 memory cells, for example, in a given operating condition of about 0 V threshold voltage;

Regarding claims 6-7 and 14-16:

during the soft-programming, the threshold voltage of one or more memory cells is inherently associated with the threshold current (see lines 17-20, column 5; lines 27-42, column 8);

Regarding claims 18-19 and 21:

as shown in Fig. 2, a first soft-programming simultaneously (see lines 50-51, column 3;

lines 38-41 and 46-49, column 4) multiplicity of 32 (bit) memory cells(see 1k bits on the right top corner of Fig. 2), for example, in a given operating condition of about 0.3 V threshold voltage (see lines 32-34, column 4); a second soft-programming simultaneously multiplicity of 16(bit) memory cells, for example, in a given operating condition of about 0.2 V threshold voltage; a third soft-programming simultaneously multiplicity of 32(bit) memory cells, for example, in a given operating condition of about 1.6 V threshold voltage;

Regarding claim 21:

during the soft-programming, the threshold voltage of one or more memory cells is inherently associated with the threshold current (see lines 17-20, column 5; lines 27-42, column 8);

Conclusion

7. The prior art made of record and not relied upon is considered pertinent to applicant's disclosure.

Pasotti et al., 6,091,642, and Pasternak, 6,522,585.

Response to Arguments

8. Applicant's arguments filed on 1/6/06 have been fully considered and are persuasive. Therefore, the last office action of 10/6/06 has been withdrawn.

However, upon further consideration and the newly discovered prior art of Lu et al., 6,363,013, a new non-final office action has been set forth as above.

9. Any inquiry concerning this communication or earlier communications from the examiner should be directed to TRONG PHAN whose telephone number is (571) 272-

1794. The examiner can normally be reached on M-F (8:30-5:00).

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, AMIR ZARABIAN can be reached on (571)272-1852. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).


TRONG PHAN
PRIMARY EXAMINER